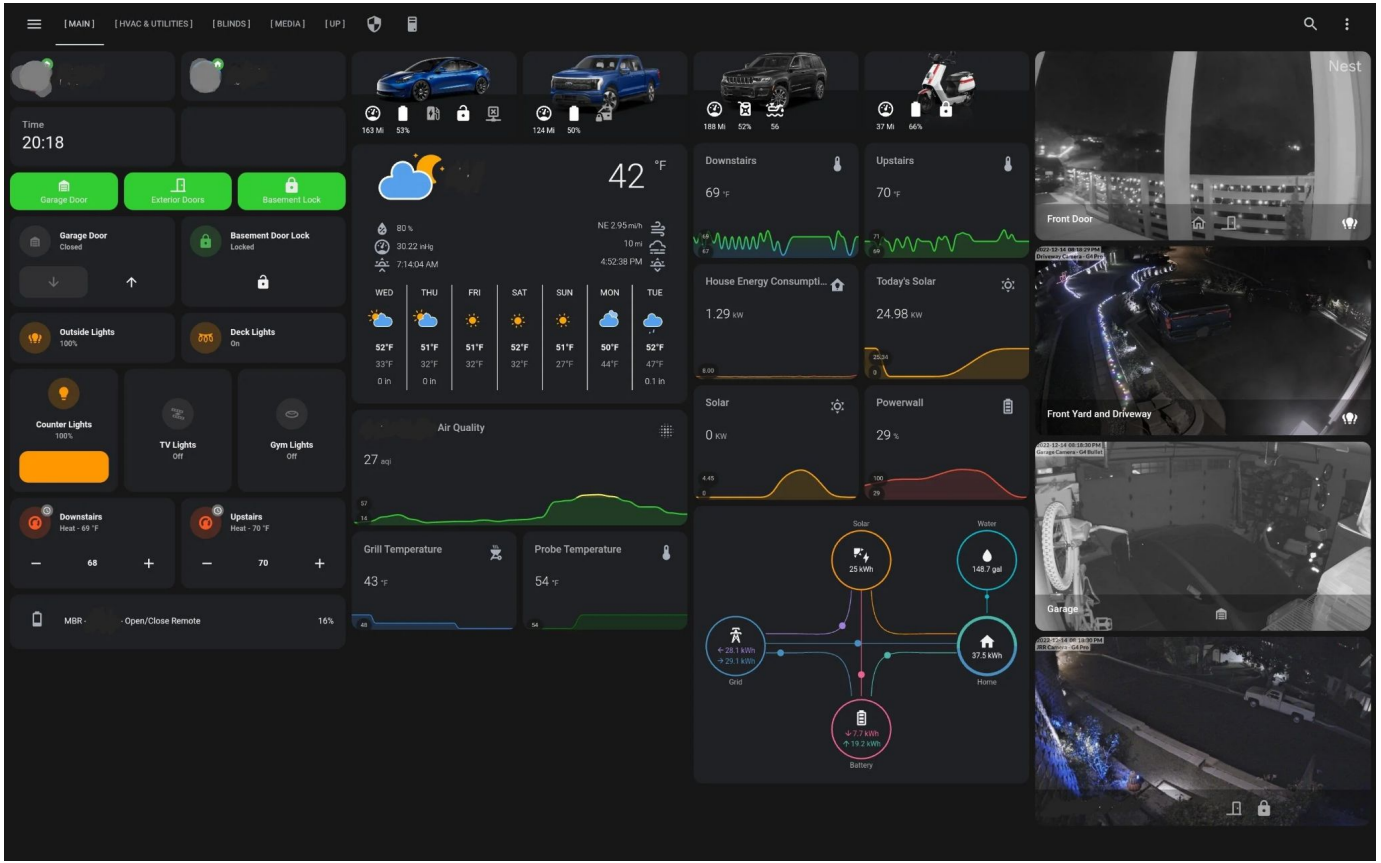
Home Assistant Bluetooth Notification

By Christopher Morales

What is Home Assistant?

- Is an open-source home automation platform that allows you to control and various devices
- Integrate a wide range of devices and services

Why use home assistant?



The target audience

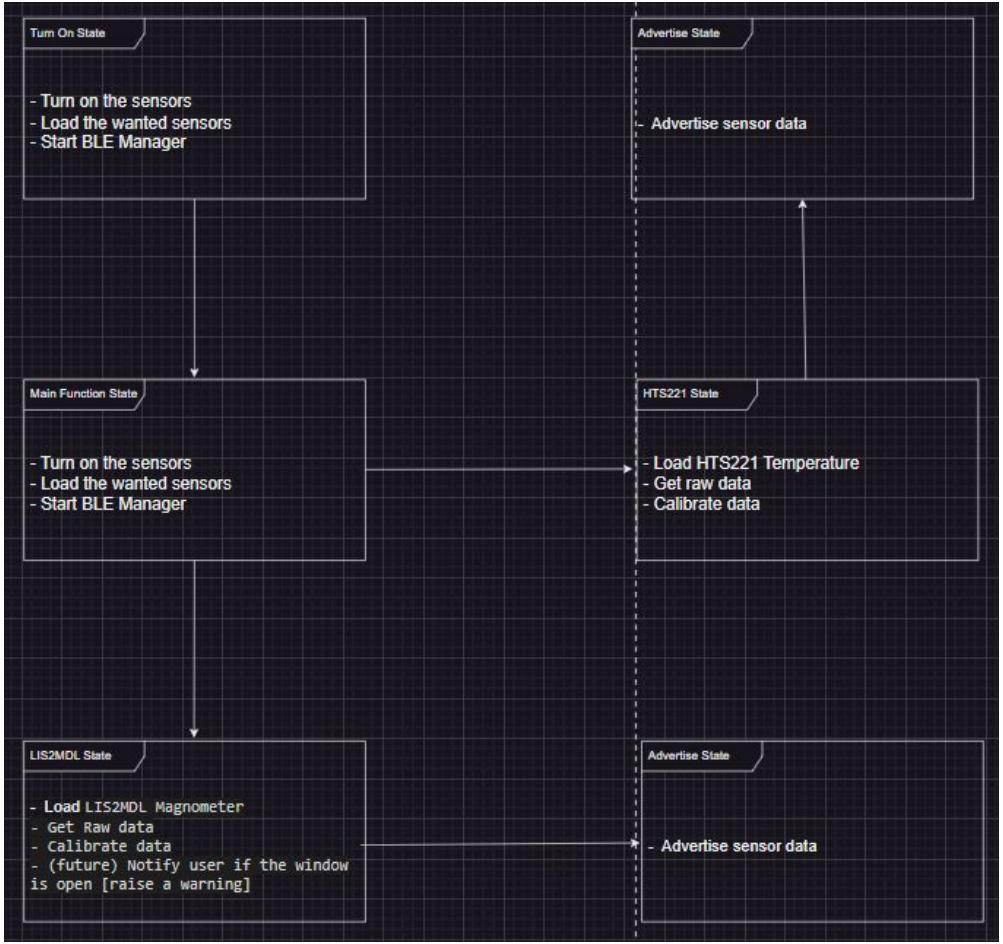
- Home Assistant main audience are technology savvy user’s
  - Basic understanding of raspberry pi
  - Knows how to use the platform (coding)
  - An idea how protocols/device connect to a node
- User has to be at home to get data

What is my objective?

- Get real time data through bluetooth
- Upload to home assistant
- Notify users/clients might have left the AC on or have remote access to control the temperature from elsewhere
- Notify user if a window is open or closed

The design method

- Load the sensors
- Get wanted raw data From sensors
- Calibrate the data
- Advertise data



Sensors in used

- Temperature and Humidity
  - HTS221 Sensor
  - Sensor can not be in a enclosure unless having inaccurate data reading
  - Must be placed for desired room
- 3D MEMs Magnetometer
  - LIS2MDL
  - Gets direction from all three axis
  - Doesn’t matter positioning of the sensor
  - This sensors requires a magnet to be placed in the door/window to detect strong magnetic fields

Bluetooth Communication Scheme

- Used Generic Attribute (GATT) that can only advertise data
- The design for the Home Assistant Bluetooth Notification just toggles the sensor
- Gets data then upload

Future plans

- Implement a Finite State Machine (FSM) to determine/control the behavior of the sensor
- Implement a GATT read/write service
  - Adding interrupts to the code to determine any debugging for faulty sensors or/and to get a sensor from a specific room
    - What happen if we have multiple of the same sensors but different locations/rooms?